

**Cruise Report
and
Forest Management Plan for Additional Lots Added to
Hadlock Community Forest
North Falmouth Community Forest
Community Park
Longwoods Road Forest**

**Prepared for
Town of Falmouth, Maine**

**Prepared by:
Rene D Noel, Jr. ACF
Licensed Forester #325
February 8, 2012**

Table of Contents

Executive Summary	1
Summary	2
Description	3
Parcel Map	4
Forest History.....	5
Management Objectives.....	6
Property Tax Status.....	6
Pertinent Laws and Regulations.....	7
Non-Timber Resources	7
Timber Resource and Vegetation Management.....	8
Invasive Species.....	9
Timber Inventory Procedure	10
Silvicultural Treatments.....	10
Silvicultural Systems	11
Appendix: Individual Parcel Management Plans (separate document)	

I. Executive Summary

A forest inventory of eight lots additional has been completed with funding from the Maine Forest Service under Project Canopy. Seven are owned by the Town of Falmouth.

The goals of owning and managing this land are to maintain open space, healthy forest ecosystems, preserve and improve wildlife habitat, and provide opportunities for recreation.

Obviously, forest will grow on most of this land without any help from humans. Left to its course, nature will provide what it provides. By managing it, it is possible to improve over what would naturally be provided. By treating the vegetation wildlife habitat can be changed to favor one species over another. Health and vigor of individual trees and stands of trees can be maintained or improved. Trees which may be or may become hazards can be removed. Aesthetics can be maintained or improved choosing to cut or not cut certain trees. For timber proper cultural treatments will improve the volume, quality, value of timber, and increase income. In summary choosing proper treatments will keep the forest more diverse, vigorous, and continually renewing itself.

Based on this inventory, a management plan has been prepared describing the forest and other resources found on the property. Recommendations for the management of the forest resources are also part of the plan.

The additional 5 units are added with this management plan have 8 separate parcels. These lots total 312 acres of which 302 are productive forest land. This forest land has a stocking of 1,705,900 and 6,046 cords. Using cords as a standard measure, all the wood on the property would total 9,058 cords, which is an average stocking of 31.3 cords per acre. This is considered well stocked to somewhat overstocked. The value of this timber totals \$408,947.50 based on sales of similar timber during the past six months. This value assumes typical sustainable forestry practices are required.

Some of these properties have had timber harvested from them recently. However most lots have not been treated in many years and most of the forest stands are highly stocked and recommendations for thinnings, improvement cuts, and harvesting are made in the plan. The treatments recommended are to maintain a healthy vigorous forest, improve wildlife habitat, and harvest a sustainable crop. Many of the recommended treatments would result in the harvest of commercial valuable timber. The treatments are done for varying purposes which include the maintenance of healthy vigorous tree growth, removal of hazardous trees in recreation areas and creation or improvement of wildlife habitat. If all the recommendations are followed it would result in a harvest of approximately 4,500 cords with a value of about \$150,000.00. The stems chosen for removal would be mostly lower quality timber, but would likely include 20% to 30% of higher quality wood.

The following was written in the 2009 plan and remains true. "Prioritizing the work is not an easy task as all of the lots will benefit from treatment. The Nature Preserve and Pine Grove Park

are the neediest from a forestry point of view, but harvesting timber is likely to be controversial on those lots. Therefore, treatment should start with Blackstrap Hill Preserve, Woods Road Community Forest or the Hadlock Community Forest. They all have stands that need work and are more traditional woodlots. Treating 50 to 100 acres annually would result in about a 10-year treatment cycle. Markets are not great as this is being written, but the first treatments will focus on removing low-grade material that never will have a high value.”

Since that plan was written to silvicultural treatments by commercial harvesting timber have been completed on the Hadlock Community Forest. The area treated totals about 150 acres. A large volume of low grade, low value, overstocked trees were removed. The residual forest has an overstory composed of larger, more vigorously growing, high quality stems. Seedlings and sprouts of young trees are seen throughout the treated areas. Wildlife habitat has been improved. More light reaches vernal pools warming the water sooner in the spring. Oak and beech are expanding their crowns forecasting increase mast production. Increase plant growth near the ground will improve food and cover for ground dwelling wildlife. In addition trails created to remove timber have improved access and longer views have improve what people see as they use the forest.

There are no conditions on any of these additional lots that require immediate attention. Some areas have been cut in the not too distant past, and there is no need to return to those soon. The Longwood Road Lots have access issues which need to be resolved. Other than those the lots can be put into general “need management treatments” category. To maintain a reasonable cycle the area treated annually should be increased to about 100 acres. This will keep the ten to fifteen year cycle.

The forest provides habitat for many species. For the most part the light thinnings and small harvests will not change the habitat very much. Some improvement in food and cover in the understory can be expected that will benefit ground dwelling animals. The overstory will be maintained preserving winter habitat for deer and canopy habitat for birds. Snags, wildlife trees, and other features attractive to wildlife will be preserved to the extant practical. (This is not always possible. A snag can also be a safety hazard that should be removed.) It is recommended that several areas that are in early succession brushland/young forest be maintained in this habitat. Also, some small areas in more mature stands are identified that could be returned to this habitat type.

Also written in 2009 follows. “One problem is common to many of the lots: the problem of invasive plants. On only two of the lots were invasive plants not observed, North Falmouth Community Forest and Hadlock Community Forest. There are some major infestations in some areas of the town properties; others have small populations. Recommendations regarding control of these plants are made throughout the plan as appropriate.”

With added areas come more problems with invasives. Community Park is badly infested with various species. The additional acres have vigorous stands of honeysuckle and buckthorn. The invasive problems along the river and power line right of way on Blackstrap forest extend south onto the additional acres. The lots west of Longwood road have well established honeysuckle stands. No problems were noted on the other lots, but regular assessments should be made as it is much easier to control a few plants than a vigorous, established stand.

Summary of Lots				
Name Added 2011	Total Acres (Town records)	Acres Woodland (GPS)	Cords per Acre Avg.	Total Value of Timber
Hadlock	67	66	35	\$89,978
North Falmouth	61	59	18	\$44,874
Community Park	40	40	29	\$42,311
Stillings Lot	24	18	26	\$21,292
Lonwoods East	27	27	31	\$35,833
Longwoods West	20	20	48	\$48,187
Totals =	312	301	Total =	\$408,895

II: Overview

There are eight town-owned forested lots in this plan. They each have unique characteristics as described below.

The forest inventory has determined that most of the forest stands are well stocked to over stocked for vigorous tree growth. There have been modest amounts of forest management on these lots over the years. The addition to Hadlock Community Forest was cut about ten years ago, prior to its acquisition by the town. The forest on added area to the North Falmouth Community Forest is similar to the stands on the original lots. The same can be said for the added area of Community Park Forest. With this addition the town owns most of the undeveloped acreage in this corner of town. The Stillings lot addition to the Blackstrap Hill

Preserve had an improvement cutting done 3 or 4 years ago. The Longwood Road parcels have not received any treatments for 40 or more years. The Falmouth Corners Property is part of several lots assembled to create a residential subdivision. Part of this was treated with an improvement cut about 30 years ago. The remaining areas do not look like they have had any treatments since the stands became established. There are numerous opportunities to thin and improve stands through the commercial harvest of timber. The timber is a valuable resource and its proper harvest would at the very least fund the management expenses of the land.

If the condition of the forest and timber growth were the primary concern, most of these lots should be treated with what foresters often refer to as improvement cuts. This is a commercial cut where treatment varies depending on what is needed. The goal is to remove the least desirable stems in the stands and “improve” the residual stand. Dis-eased, damaged, defective, over mature and overcrowded stems would be removed. Culturally, the cutting combines salvage, sanitation, thinning, selection and shelterwood treatments depending on what is needed. Wind damage is a concern in any forests that has not experienced any thinning. The trees have come to rely on each other for support. How much to thin and still leave a wind firm residual stand is some of the “art” of forestry. In many instances, it will not be possible to thin down to ideal levels for future growth. In these instances a shorter period of time between cuts is recommended to reduce stocking in a series of cuts until the residual stems grow root systems and stem form that will resist wind damage. In general almost all of the forest stands would benefit if stocking were reduced 25 to 30 percent.

The forest mostly provides low to medium quality habitat for species that utilize woodland. This simply means that wildlife has to travel to find different things they need in the forest. High quality habitat provides for all of a species needs in a fairly small area. Since there has been little cutting, understories tend to be thin to none existant, providing little cover. Red oak, beech and limited number of white oaks are found on most of the lots and provide good hard mast. The Woods Road Community Forest is recognized as a deer wintering area and evidence is that deer utilize it as such. Community Park has a fair amount of early successional habitat. Much of this, however, is on the verge of growing into young forest habitat. There is a great opportunity here to maintain a type of habitat that is declining throughout Maine. This area has the potential to be important habitat to an threatened species, the New England Cottontail.

All of the lots see some recreational use. Trails are established on all of them and people obviously use them for walking, skiing, hunting, ATV and snowmobile riding. Most of the trails are in good condition. However, if ATV use increases it is likely erosion will occur in some places if the trails are not hardened and soils stabilized.

It is not surprising that 350 years after European settlement of the area, and a sea trading history, that invasive plant species are common. Almost all of the lots have some infestations. Bittersweet, honeysuckle, barberry, multi-flora rose, Japanese knotweed are some of the more

common problem plants found. While some of these plants are attractive and provide some benefits to wildlife, they replace native plants and upset the natural ecology. In places they will dominate the site, making regenerating native trees impossible.

III: Description

Hadlock Community Forest has been increased by the acquisition of 67 additional acreage. Most of the forest is hemlock/white pine/hardwood similar to stands on the original ownership. There is some variation due to cutting done over the past 20 years but from silvical (forest ecology) and silvicultural points of view it is very similar forest. There is a small area of soft maple wetland along a tributary brook that flows into the larger wetland on the original forest. These parcels connect the original forest with the golf course property and trails from that area lead through these forest to access the larger part of the forest. Evidence of use by hikers and hunters were seen during the field work for this plan.

North Falmouth Community Forests original 49 acres has been augmented by an additional 61 acres. Terrain, soils, and forest are similar to the original and typical of those found along a ridge that begins in Gray and runs through the Atherton Hill portion of Windham and south into this part of Falmouth. Soils are glacial origin and hemlock, red oak, beech and smaller numbers of white pine commonly make up the forest stands. This acquisition adds a right of way from Falmouth Road making the property more useful for recreation.

Blackstrap Preserve, Stillings Lot is a 24 acre parcel on Blackstrap Road that includes 6 acres of open field, a small farm pond and 18 acres of additional forest. Open undeveloped field type is becoming a rare habitat type and this acquisition will preserve this small field type. The forest was treated with an improvement cut the winter of 2005 and the residual forest is composed in large part of high quality stems.

Longwood Road Properties both appear to have be the undevelopable portions or remaining undeveloped areas of subdivisions. Much of the forest is composed of hemlock/white pine/hardwood. This is a recurring theme, however, soils and climate combine to make these species the most common. East of the road hemlock is a little more common, west of the road pine. On the better drained sites oak and beech are the predominant hardwoods where on wetter sites soft maple becomes the dominant hardwood. There are stands soft maple wetlands also found on both sides of the road. There was no evidence of any treatments in these areas for many years. Possibly since the current stands were established.

Falmouth Corners again is the back land of a residential subdivision. Here again more than half the forest is composed of white pine/hemlock/hardwoods. There is also a stand of excellent red oak as well as a small soft maple wetland. There are numerous walking trails found on this property. Some obviously were seeing a fair amount of traffic. Others are less used. Maintenance

and marking also vary. The more used trails are well maintained and mark where the lesser used trails are not as well maintained and less well marked.

IV. Forest History

During the late 1700's and 1800's, the properties were used for agricultural, residential and industrial purposes, such as cropland, hay land and even the most remote land as pasture. Evidence of these past uses exists in form of stonewalls, old wire fences, stone foundations, trail and road remains, and old earth works. In the late 1800's to early 1900's, agricultural use of most of what is now forested land was abandoned. Stumps and remains of old trails are evidence of past harvesting activity. It appears fairly extensive harvesting of merchantable timber was done about 60 to 80 years ago. This coincides with World War II when much timber was utilized for war material and for crates and pallets used to ship material. Since that time less cutting has been done. A harvest were completed on the Hadlock addition 10-20 years ago. Parts of the North Falmouth additions in the last few years. An improvement cut was completed on the Stillings lot in 2005. Parts of the Falmouth Corner property were treated with an improvement cut 25 to 30 years ago. Most other portions of the property have seen little in harvesting or management treatments since the stands were established.

V. Management Objectives

Goals include providing educational and rec-reational opportunities, wildlife habitat, maintaining open space and a healthy vigorous forest. The production of forest products and achievement of cultural goals through commercial timber harvesting. These goals are mutually attainable though some are more important on some areas than others. Maintaining a healthy forest is an important part of all these goals.

VI. Property Tax Status

All of these properties are in public ownership and is not taxable.

VII. Pertinent Laws and Regulations

Forest Practices Act: Clearcuts of five acres in size or greater are regulated by the state of Maine. Considering the city's goals, this is unlikely to affect management unless there is a natural disaster where clean up and salvage become necessary and that would be exempted.

Natural Areas Protection Act requires there be no damage to any of the state's waters. Best Management Practices should be used to comply with this law.

Hiring a consulting forester to administer the sale of timber as recommended within the plan will ensure compliance with all Maine State laws. There are no city ordinances of which the author is aware that would affect the recommendations found in this plan.

VIII. Non-Timber Resources

Endangered species / Exemplary Communities: The range of the New England Cottontail Rabbit and woods turtle are known to extend into Falmouth. No sign of these animals was seen during the forest surveys done for this report. However, past sightings have been made near the subject parcels. Both the woods turtle and New England Cottontail reportedly have been seen on community park. There may be opportunities to improve or create habitat for this rare animal, however. In particular along the Piscataqua River and in Community Park there are areas that could be treated to create or improve existing habitat.

Several areas identified as deer wintering areas are found on the subject parcels. (see maps)

Fish and Wildlife Habitats: Specific wildlife habitat management recommendations are found in each stand description. The forest management recommendations within this plan will positively affect habitat by creating conditions encouraging healthy, vigorous forest growth. A greater diversity in tree age classes, a multi-layered canopy, and more plant growth at the ground level will create better habitat conditions for more wildlife species.

Wildlife needs food, cover and water. As a forest matures, low growing vegetation becomes less common as less sunlight penetrates the canopy. If there is no disturbance for a long enough period of time, a park-like forest results with little vegetation growing between the main canopy and the ground. This condition provides sparse habitat except for those species that live their lives in the canopy layer or in the forest floor litter. At certain times food from mast or mushrooms may be plentiful, but by its nature a park-like forest has little to offer most species. Harvesting trees controls light reaching the ground and residual trees. More light penetration means more plant growth near the ground. This provides more food and cover to more species. Harvesting trees can provide differing habitats. A clear cut sets the forest back to its beginnings and provides early succession habitat. Selection cuts provide smaller openings and a mix of ages. Thinning does not create many openings but does space trees more widely so that light penetrates and maintains an understory. Any of the partial harvests methods if applied correctly will result in more vigorously growing residual trees. More vigorous trees produce bigger seed crops and more food for wildlife.

Water Quality and Wetlands: There are numerous intermittent streams and small wetlands on all the properties. These wetlands are important for maintaining water quality. As water flows down these small watercourses and through wetlands sediments fall out, nutrients are absorbed, and the

slowed flow helps prevent downstream flooding, allows water to penetrate the soil to recharge aquifers.

Cultural and Historical Sites: Maine Historic Preservation Commission list possibility several historical or archeological sites identified on these properties. Extreme care should be taken when working near these areas. As previously mentioned, there are artifacts of long human use on all of the lots.

Recreation: Recreation is a very important use of the properties. Educational and recreational programs are part of the long-term goals for these properties. As previously noted, numerous trails are found throughout the lots. Several teachers use parts of the properties as outdoor classrooms. The trails and property are open to the public and the town intends to maintain and expand the educational and recreational use of its woodlands.

Aesthetics; Managing the trees on the property will maintain a vigorous healthy forest stands of multiple age classes which will help maintain aesthetic quality of the stands. Actively managing the forest for the production of forest products in close proximity to a residential neighborhood in forest heavily used for recreation demonstrates responsible forest management and is compatible with recreational and abutting residential use. It will also provide opportunities to enhance recreational uses.

Large woody debris, a short-term by-product of forestry operations, should be mentioned. It is dead wood in the form of trunks, large branches and stumps and is an important component of habitat for many wildlife species. Such debris, known as slash, is often seen as waste or an eyesore by many people. This is an excellent educational opportunity to inform people that this debris actually creates valuable wildlife habitat, especially for small mammals and other creatures low on the food chain. And while not aesthetically pleasing, is an important part of that habitat. Through the process of decay, this debris also enriches the soil and thus promotes the overall health of the forest.

IX. Timber Resource and Vegetation Management

All of the lots are stocked with high volumes of forest products. Some of the properties have had wood harvested from them in recent years, however, it has been a long time if ever on many of these lots since any treatment has occurred. Trees have value and many forest industries rely on woodlands of southern Maine to supply their raw material. Much of the cultural treatment recommended can be accomplished by the sale of trees to loggers. The income realized can be utilized to other treatments which will have a cost.

Loggers are available from small chainsaw/tractor equipped contractors to those with large mechanized tree harvesting equipment. There are positives and negatives to the various equipment options. With a good definition of goals, it is possible to choose contractors with the right equipment to achieve the stated goals. Any selected contractor should meet Certified Professional Logger standards.

X. Invasive Species

It is not be surprising that, with over three hundred years as a human population center and sea-port, that non-native, invasive plants are now components of area forests. By definition invasives regenerate vigorously and are aggressive in occupying new sites. Once established they often form dense stands and exclude native vegetation. Often they have few enemies that feed on them. Some provide wildlife habitat, but they also displace native species. Many have growth characteristics that make it difficult to use the forest.

Species that were most commonly seen during the fieldwork were bittersweet, Japanese knot-weed, barberry, buckthorn and Japanese honeysuckle. There are other species also found but these five are very common. The author recommends controlling these at every opportunity.

XI. Timber Inventory Procedure

The maps drawn for this plan were developed using information from several sources. Aerial photos were down loaded from the state's GIS web site. Property lines were located with GPS data and from digital data from the city tax maps. Aerial photos were used to identify prominent stand types. Stand type lines were further refined on field maps produced during fieldwork for the forest inventory.

Variable plot or point sampling was the method used for the timber inventory. Point sampling measures the relative density of trees rather than the actual number of trees on a fixed area (fixed area sampling). Point sampling assumes that there is an equal stocking expressed as basal area (square feet of stump area) for each tree measured regardless of size. Since large trees have more basal area large trees are more intensively sampled than small trees. Point sampling is desirable because larger more valuable trees are more intensively sampled and it is relatively quick and efficient to use. A 20 basal area factor (BAF) prism was used for this inventory

Inventory samples were systematically spaced. On the smaller parcels on a grid 200 by 200 feet apart; in the larger parcels samples were space on a 300 by 300 foot grid. All stands were inventoried down to the two-inch class for tree species. Regeneration, shrub and herbaceous species were noted around plot center. In total 120 twenty factor basal plots taken. Statistically this inventory worked very well. The coefficient of variation for basal area over the cruise is 39.5 with a 6.9% error at the 95% confidence. There is no good way to get the same statistics for total volume the way the inventory was completed and the software configured, but the statistics for

value, which are a good proxy for total volume, are a coefficient of variation of 58.5 and an error of 10.1% at 95% confidence. As the totals are parsed into smaller samples for lots and stands the estimates will not be as accurate but are very good for planning purposes.

Merchantable height was recorded in five-foot increments of cordwood to a four-inch top or the number of eight foot logs sections of saw or veneer logs based on the utilization standards for each species. Sample data was then calculated using Two Dogs brand software. All volumes are expressed in standard cords and thousand board feet (MBF), international ¼ inch scale. Desirable, young stems likely to produce high value saw logs or veneer in the future are identified as growing stock, although because of small diameter their current value is that of pulpwood or firewood. This distinguishes the volume from other stems of poorer quality that are likely to remain as pulpwood or other low value products.

Table II: Log utilization standards for standing trees.

Species	Diameter Breast Height in inches	Small end
Spruce and fir	8	6
White birch	8	7
Red oak	10	9
All other hardwoods	12	10
All other softwoods	10	8

XII. Silvicultural Treatments

For both short and long term management, a combination of the shelterwood and selection methods of silviculture is recommended with a cut-ting cycle of 10 years. That is, on the average each area should be cut every ten years. A fairly short cutting cycle allows more of the potential mortality to be salvaged and also allows for more conservative thinning. Also the visibility of regularly applied treatments will educate the public that the forest benefits from regular treatments and to expect that they will occur.

Forests in fast growing southern Maine towns are a unique asset. Cultural treatments are recommended that will maintain the health and vigor of the forest and assure that natural forests continue to exist for future generations. The production of forest products and income derived from the sale of those products are a crop, but also by-products of treating the forest for continued health. That said, the cutting of trees is a necessary cultural practice. Trees need to be cut to give growing room to more desirable stems, release existing regeneration, or to create conditions suitable for the establishment of regeneration, to remove hazardous trees, maintain wildlife habitat, and for many other reasons encountered in managing a forest.

Some may argue that these parcels be treated as wilderness. While large compared to city residential lots, they are small from a forest's perspective and cannot fill the ecological role of a wilderness. They are affected by land use of abutting property, invasive plants, and constant human and domestic animal traffic. Managing the vegetation – forest trees – in this situation would be proactive. A forest appropriate to its intended use can be developed. The alternative is reactive management dealing with trees which have become dangerous or have fallen do to natural events.

Large trees have an attraction of their own and it is recommended that some be grown to maximum size for the species and site. These may occur as single stems or groups of stems depending on what nature provides. Where these large stems occur or grow in the future, the area around them should be treated with periodic sanitation cuts to remove younger stems that are crowding these old slow growing relics. Depending on their location, these large stems should be examined regularly to determin if they have become hazardous and treated appropriately.

It should be pointed out that the recommendations are based on current conditions to attain the owner's current goals. Should conditions, such as markets, natural conditions, or the landowner's needs change, the recommendations should be modified to reflect those changes. For example, it makes no sense to sell high valued timber when markets for that timber are weak. Waiting will have little effect on forest growth, but could greatly in-crease the income realized. Alternatively, should the owner's needs change, there is timber available for cutting. Cutting sooner than planned may not maximize the timber value, but may be the owner's best financial choice and can be done without damaging the long-term productivity of the forest.

Forestry is defined as an art and a science. To assure that treatments are applied properly, it takes a skillful selection of trees to be removed and layout of trails to allow equipment access. Considering this I strongly recommend that a skilled and experienced forester be used when any silvicultural treatments or timber sales are applied.

XIII. Silvicultural Systems

Shelterwood

The shelterwood system is an even-age system of silviculture. That is, all of the trees in the forest stands are near the same age. In this system, the stands are thinned periodically until they are ma-ture. Once mature, they are thinned in a manner that will encourage the establishment of seedlings of desirable species. These seedlings then devel-op under the “sheltering” overstory. As the seed-lings develop, that sheltering overstory is removed in one or more harvest cuts.

By extending the removal period to two, three or more cutting cycles, a forest managed by a shel-terwood system may take on the appearance of a forest managed under the selection system. The difference is somewhat academic, but does affect which trees are selected for cutting and

when they are cut. Also, it results in forest stands that are composed of trees that are near the same age.

Selection

In the selection system, individual stems and groups of stems are selected for cutting. Thinning and harvest are combined in this system. Reproduction becomes established in openings created when groups are cut, and uneven or all-age forest stands result. If only small openings are made in the canopy, reproduction will be only of species that are tolerant of shade. Larger openings, at least as wide as the surrounding trees are tall, will allow some stems of intermediate and shade intolerant species to become established. A cutting cycle of ten years is recommended. In the most intensive applications of this system, pre-commercial thinning and weeding is conducted within groups of young stems. This is generally done following a commercial harvest and is restricted to those areas that do not have a competing overstory. The regeneration component in this forest is relatively young. Pre-commercial thinning is not likely to be needed as a cultural treatment within the time that this plan covers.

FOREST DESCRIPTIONS AND RECOMMENDATIONS

Note: Forest Stands have been numbered to coordinate with numbering in the management plan prepared in 2009.

Hadlock Road Forest

East of Hadlock Road

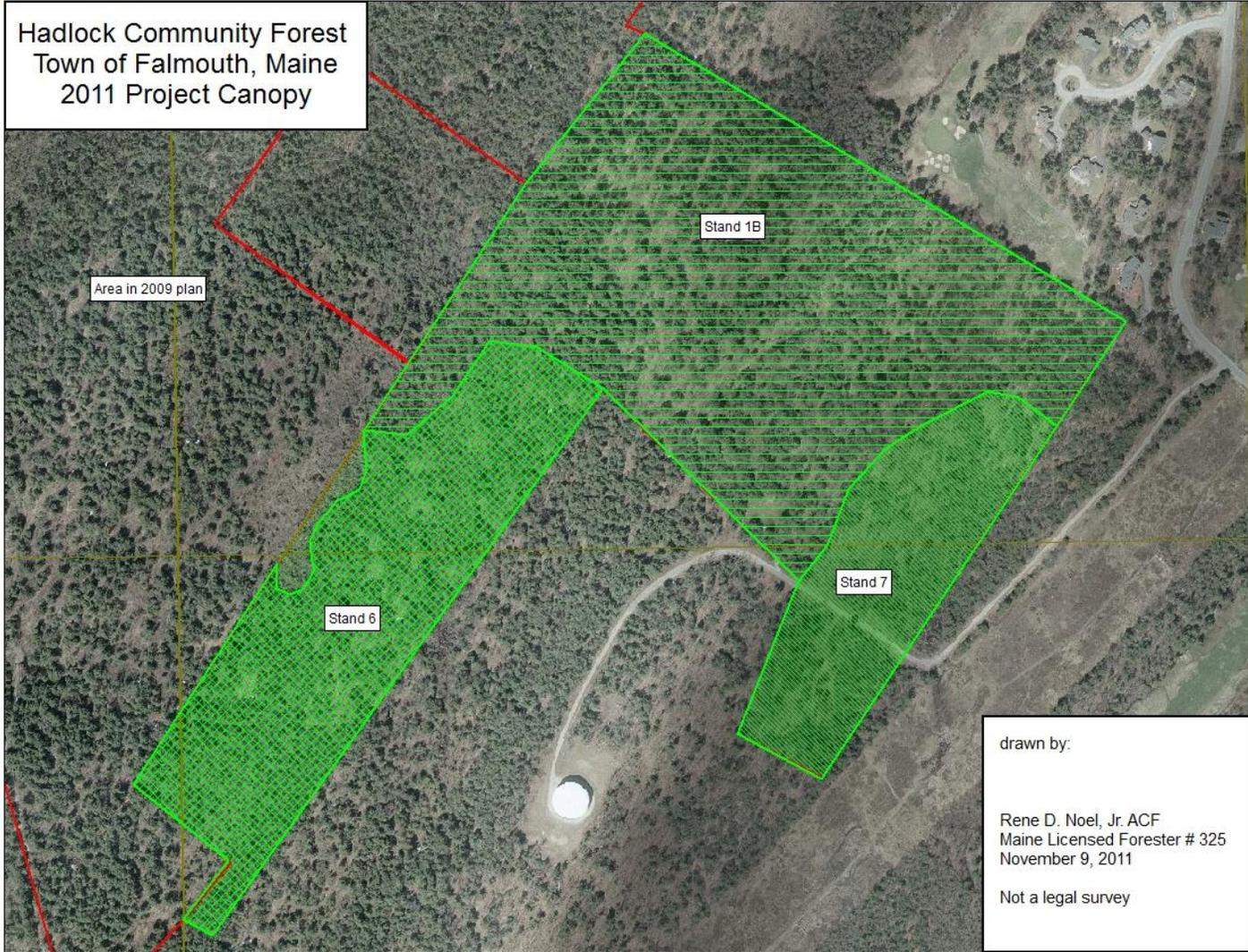
Introduction: This addition adds 67 acres to one of the larger parcels in the inventory community forest. It was assembled of several lots with differing forests. A number of trails cross the property. Snowmobile/ATV trails appear to get regular maintenance.

Growth: We found a total of 67 acres with commercial stocking on this lot. These acres grow 9,827 board feet of sawtimber and 33.75 cords of pulpwood and firewood per year. Looked at in a standard measure, the total merchantable growth is 53.5 cords per year, or 0.8 cords per acre, per year. The value of this growth is approximately \$4,198.58, which is \$62.67 per acre per year.

These numbers are good for forests in this area. Annual volume growth can be increased somewhat with good cultural practice. However, value growth can be improved considerably. Harvesting lower quality trees will shift growth to higher value stems. Also this forest has many good quality small stems. As these small stems grow from cordwood products to sawlog size it will increase the value of the wood growing on the parcel. Currently two thirds of this areas growth is of wood not suitable for higher value products. It is possible through good cultural practice to reduce this to about one third.

Management: There are numerous trails both used for snowmobiling and hiking/cross country skiing. Hunters also make use of this area. Several possibly significant vernal pools were seen during the field work, and forest wetlands are found on the property.

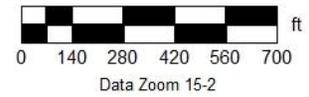
What is identified as Stand 6 was harvested about 8 years ago. Stand 1B and 7 also were harvested but evidence indicates 15 or more years ago. All cutting appears to have followed good silvicultural guide lines, which indicates a forester likely supervised the harvests. Light recreational use, wildlife habitat and timber harvesting are the traditional uses of the property. The northern corner of this additional land bounds the area harvested on the Hadlock Forest during the winter of 2010/2011. Continuing to manage for these multiple uses is recommended.



Data use subject to license.

© DeLorme. XMap® 7.

www.delorme.com



=====
Forest

=====
=====
=====
=====

Stand Descriptions

Hadlock Community Forest Stand 1B

Hadlock Community Forest Stand 1B Acres 37								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White Pine	23,600	10	3%	220.00	10.00	5,192.00	100.00	
Hemlock	155,900	349	2%	65.00	15.00	10,133.50	5,235.00	
Red oak	52,700	81	2%	275.00	25.00	14,492.50	2,025.00	
White ash	2,300		2%	100.00	25.00	230.00	-	
White birch		53	2%	80.00	25.00	-	1,325.00	
Yellow birch	13,400	87	5%	100.00	25.00	1,340.00	2,175.00	
Soft maple	8,800	175	2%	100.00	25.00	880.00	4,375.00	
Hard maple	9,000	46	3%	150.00	25.00	1,350.00	1,150.00	
Beech	4,700	10	3%	50.00	25.00	235.00	250.00	
Totals	270,400	811				33,853.00	16,635.00	
per/acre	7,308	22						
cds/acre		36.54						

Pole to Small Sawlog Size Hemlock, White pine and Hardwoods, Stand 1B					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
37	148.3	6.3	485.4	86.2	0.61

Location: This stand makes up the northeast half or two thirds of this new acquisition (see map).

Terrain and Soils: Terrain is rolling. Soils are mostly of the Hollis, Belgrade and Ridgebury sandy loams and Scantic silt loam. These are productive timber-growing soils. The Hollis and Belgrade soils are moderately well to well drained. These soils will support heavy equipment except for the wet times of year. Ridgebury soils are only moderately drained. Scantic soils are poorly drained. When wet none of these soils bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: Walking trails pass through the stand in several places. Old skid trails lead out west to a landing off the access road to the water tower.

Composition and Quality: This is a softwood tending towards mixedwood type. It is composed mostly middle age classes of second growth timber with scattered older residuals. Most remaining stems appear to be between 60 and 100 years of age. Eastern hemlock, white pine and red oak are the most common species. Scattered stems of soft maple, white ash, white, black and yellow birch and beech are found. The stand appears to have been thinned about 15 years ago leaving a residual stand of good quality stems. Stems range from large pole to medium sawlog size with most being in large pole to small sawlog size. Quality is average to good. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration varies and is heavy where cutting was done. It is composed of the same species that make up the overstory.

Recommendations: The stand will benefit from an improvement cut to remove low quality, damaged, diseased and overstocked stems as well as release established regeneration. The stand is at a stocking where this treatment is possible. It is not a high priority and could be done soon to within five years. White pine and red oak will be the most productive timber species on most of the soils found in this stand and should be favored. Basal area should be reduced to about 100 to square feet per acre.

Volume to be harvested at this time is estimated about 400 cords.

The selection system of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is heavily used by wildlife. There is plentiful browse for deer. Young growth provides cover for snowshoe hare and other ground-dwelling wildlife. Both fox and coyote tracks were seen during a field visit. Though it is not recognized as a deer winter area it certainly has characteristics that make it suitable. In general the stand has a southwest aspect providing varying options for southerly and westerly sun. Deer often favor stands with a southerly aspect for winter cover. Snags and wildlife trees were left during the previous cut and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

Hadlock Community Forest Stand 6

Hadlock Community Forest Stand6								
Acres 19								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White Pine	29,300.00	14	3%	220.00	10.00	6,446.00	140.00	
Hemlock	43,600.00	227	2%	65.00	15.00	2,834.00	3,405.00	
Red oak	24,900.00	81	2%	275.00	25.00	6,847.50	2,025.00	
White ash		7	2%		25.00	-	175.00	
Soft maple		74	2%	100.00	25.00	-	1,850.00	
Hard maple		7	3%	150.00	25.00	-	175.00	
Totals	97,800.00	410				16,127.50	7,770.00	
per/acre	5,147.37	22						
cds/acre		31.87						

Sawlog Size Hemlock, White pine and Hardwoods, Stand 6					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
19	135.0	6.3	485.4	86.2	0.61

Location: This stand makes up the southwest arm of this new acquisition (see map).

Terrain and Soils: Terrain is rolling. Soils are mostly of the Hollis, Belgrade and Ridgebury sandy loams and Scantic silt loam. These are productive timber growing soils. The Hollis

and Belgrade soils are moderately well to well drained. These soils will support heavy equipment except for the wet times of year. Rigdebury soils are only moderately drained. Scantic soils are poorly drained. When wet none of these soils bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: Walking trails pass through the stand in several places. Old skid trails lead out north and east to a landing off the access road to the water tower.

Composition and Quality: This stand type is similar to Stand 1, however, it has been cut recently. This is a softwood tending towards mixedwood type. Eastern hemlock, white pine and red oak are the most common species. Scattered stems of soft maple, white ash, white, black and yellow birch and beech are found. Stems mostly range from small to medium sawlog size. Quality is average to good. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration varies and is heavy where cutting was done. It is composed of the same species that make up the overstory.

Recommendations: The stand needs time to grow. In five years or so it will benefit from an improvement cut to remove low quality, damaged, diseased and overstocked stems as well as release established regeneration. White pine and red oak will be the most productive timber species on most of the soils found in this stand and should be favored. Basal area should be reduced to about 100 to square feet per acre. This harvest should produce about 150 cords.

The selection system of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: As with Stand 1, this stand is heavily used by wildlife and the same comments are made. There is plentiful browse for deer. Young growth provides cover for snowshoe hare and other ground-dwelling wildlife. Though it is not recognized as a deer winter area it certainly has characteristics that make it suitable. In general the stand has a southwest aspect providing varying options for southerly and westerly sun. Deer often favor stands with a southerly aspect for winter cover. Snags and wildlife trees were left during the previous cut and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

Hadlock Community Forest Stand 7

Blackstrap Community Forest Stand6 Acres 11							
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s	
						Sawtimber	Cordwood
Hemlock	4,500	34	2%	65	15	293	510
Red oak	30,200	44	2%	275	25.	8,305	1,100
White birch		9	2%	80	25	-	225
Yellow birch		28	5%	1000	25	-	700
Soft maple	4,600	50	2%	100	25	460	1,250
Hard maple	3,100	22	3%	150	25	465	550
Beech	17,200	35	3%	50	25	860	875
Totals	59,600	222				10,383	5,210
per/acre	5,418	20					
cds/acre		31.02					

Pole to Small Sawlog Size Hardwoods, Stand 10					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
11	148	6.7	488	1,267	1

Location: This stand is found on the eastern side of the property straddling the access road to the water tower (see map).

Terrain and Soils: Terrain is flat to gently sloping. Soils are mostly Belgrade and Hollis sandy loams with some Scantic silt loams in the northeast portion of the stand. These are productive timber growing soils. Hollis and Hinckley are moderately well to well drained. Scantic is wet. When wet they do not bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: A walking trail passes through the western part of the stand. It has been some time since this stand was cut, and it is not apparent how the wood was removed.

Composition and Quality: This is a pole to small sawtimber hardwood stand. Most remaining stems appear 40 to 80 years of age. Red oak, yellow and black birch and hard maple are the most common species. Scattered stems of white birch, beech and soft maple are found. Stems range from pole to small sawlog size with most being 6 to 16 inches in DBH. Quality of the potential crop trees is good to excellent. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration in most areas is limited to suppressed seedlings and saplings of shade tolerant species. Most is not desirable regeneration.

Recommendations: The stand will benefit from a thinning and improvement cut to remove low quality, damaged, diseased and overstocked stems. Red oak and sugar maple are most common to this stand and are a productive timber species on the soils found here. Oak is also important to wildlife for the mast it produces. Basal area should be reduced to the range of 90 to 100 square feet per acre. This harvest should produce about 100 cords. A combination of the selection and shelter wood systems of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is lightly used by wildlife. There is evidence of wildlife traveling through the stand. When acorns are present they are heavily utilized by many species. For most of the time wildlife use this area to travel through to feed on what is available. Snags and wildlife trees were left during previous cuts and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

North Falmouth Community Forest

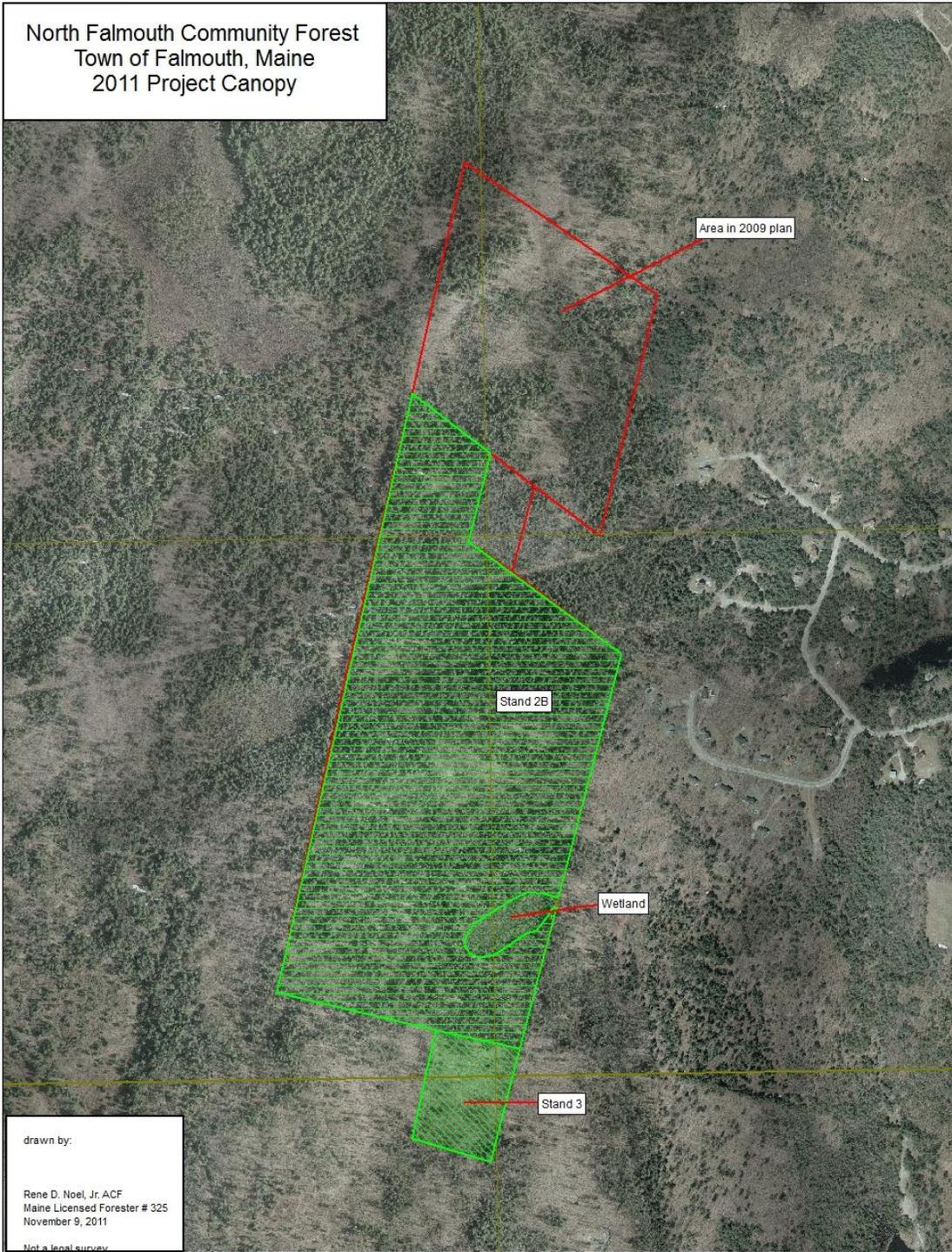
In northern corner of town off Falmouth Road

Introduction: This addition adds 61 acres to the parcels included in the earlier inventory and plan. It is composed primarily of several lots. The forest shows variation consistent with the past history of land ownership and use. Access is by two rights of way. One originates on the Falmouth Road and the other on the Blackstrap Road.

Growth: There is a total of 61 acres with commercial stocking on this lot. These acres grow 4,873 board feet of sawtimber and 18.13 cords of pulpwood and firewood per year. Looked at in a standard measure, the total merchantable growth is 27.9 cords per year, or 0.45 cord per acre, per year. The value of this growth is approximately \$1,238.36, which is \$20.30 per acre, per year. These numbers are low for forests in this area. Annual volume growth is low due to large numbers of sub merchantable size stems which have become established following heavy cutting. Volume growth will increase as these small stems grow into merchantable size classes. Value growth can be improved with the applications of good cultural practices. Harvesting lower quality trees will shift growth to higher value stems and increase the value of the wood growing on the parcel.

Management: Much of this area is similar to stand 2 on the area north of this. It is typical of thousands of acres of upland hemlock, white pine, red oak and beech stands in southern Maine. It provides reasonably good habitat for woodland wildlife. Of note it is part of a fairly large undeveloped area across Atherton Hill that straddles the Falmouth/Windham Town line. The small stand at the south end of the property is composed of young hardwood.

North Falmouth Community Forest
Town of Falmouth, Maine
2011 Project Canopy



Data use subject to license.

© DeLorme. XMap® 7.

www.delorme.com



Data Zoom 14-4

Stand Descriptions

North Falmouth Community Forest

North Falmouth Community Forest, Stand 2B								
Acres 50								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White Pine	102,900	69	3%	\$220.00	\$10.00	\$22,638.00	\$690.00	
White pine pallet	1,700		3%	50.00		85.00	-	
Hemlock	41,400	340	2%	65.00	15.00	2,691.00	5,100.00	
Spruce & Fir	1,300	3	4%	150.00	10.00	195.00	30.00	
Red oak	23,200		2%	275.00	25.00	6,380.00	-	
Soft maple	4,900		2%	100.00	25.00	490.00	-	
Beech	3,500		3%	50.00	25.00	175.00	-	
Popple	4,700		4%	50.00	30.00	235.00	-	
Hardwood		183	3%	50.00	25.00	-	4,575.00	
Totals	183,600	595				\$32,654.00	\$10,395.00	
per/acre	3,672	12						
cds/acre		19.24						

Pole to Small Sawlog Size Hemlock, White pine and Hardwoods, Stand 2B					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
50	90.9	10.3	136.3	97.5	0.49

Location: This stand makes up most of this new acquisition (see map).

Terrain and Soils: Terrain is rolling. Soils are mostly of the Hollis, Belgrade and Ridgebury sandy loams and Scantic silt loam. These are productive timber growing soils. The Hollis and Belgrade soils are moderately well to well drained. These soils will support heavy equipment except for the wet times of year. Ridgebury soils are only moderately drained. Scantic soils are poorly drained. When wet none of these soils bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: Two woods roads enter the property. One enters from the south the other from the east. Small landings are in place on these woods roads. Networks of skidder trails leading from the landings are established. A snowmobile trail follows an old telephone right of way through the property.

Composition and Quality: This is mixedwood type. It is composed mostly middle age classes of second growth timber with scattered older residuals. Most remaining stems appear to be between 60 and 100 years of age. Eastern hemlock, white pine and red oak are the most common species. Scattered stems of soft maple, white ash, white, black and yellow birch and beech are found. The stand appears to have been cut several times over the last 25 years with the last harvest having occurred only a few years ago. Stems range from large pole to medium sawlog size with most being in large pole to small sawlog size. Quality is average. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration varies and is heavy where cutting was done. It is composed of the same species that make up the overstory. Beech is a major component in many areas.

Recommendations: Most of the stand needs time to grow. It should be examined in ten years to schedule silvicultural treatments. The exception to this may be some areas in the northern portion of the property. It is too small an area to support a timber harvest on its own but if the lots to the north are commercially treated these areas could be treated with an improvement cut at the same time.

The selection system of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is heavily used by wildlife. There is plentiful browse for deer. Young growth provides cover for snowshoe hare and other ground dwelling wildlife. Much sign of many species of wildlife was seen during the field work. Snags and wildlife trees were left during the previous cut and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

North Falmouth Community Forest Stand 3								
Acres 8								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
Hardwood		73	5%	\$50.00	\$25.00			\$ 1,825.00
Totals	-	73					-	\$1,825.00
per/acre	-	9						
cds/acre		9.13						

Sapling & Pole Hardwoods, Stand 3					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
8	60.0	6.7	136.3	-	0.46

Location: This stand is a small rectangle at the south end of the new acquisition (see map).

Terrain and Soils: Terrain is rolling. Soils are mostly Ridgebury sandy loams. This is a productive timber-growing soil. Ridgebury soils are only moderately drained. When wet it does not bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: The wood road which enters from the south comes to this stand. A network of skidder trails leading from the landing reaches all parts of the stand.

Composition and Quality: This is hardwood type. Most remaining stems appear to be about 60 years of age and are of firewood or pulpwood quality. Soft maple, beech and red oak are most common. The stand appears to have been cut several times over the last 25 years with the last harvest having occurred only a few years ago. The last cut appears to have harvested most of the mature stems. Quality is poor to average. In most places a sapling stand is established that will grow to replace the overstory.

Understory: Much of this stand is in the regeneration stage. Beech is a major component in many areas.

Recommendations: The stand needs time to grow. It should be examined in ten years to schedule silvicultural treatments.

The selection system of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is heavily used by wildlife. There is plentiful browse for deer. Young growth provides cover for snowshoe hare and other ground-dwelling wildlife. Much sign

of many species of wildlife was seen during the field work. Snags and wildlife trees were left during the previous cut and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

Falmouth Community Park Forest

Borders on Northeast side of Community Park near Field Road

Introduction: This parcel adds 40 acres to the community park included in the earlier inventory and plan. It appears to have been part of a farm. The forest shows variation consistent with the past history of land ownership and use. Access is through Community Park and a right of way out to Field Road.

Growth: There is a total of 40 acres with commercial stocking on this lot. These acres grow 4,306 board feet of sawtimber, and 20.27 cords of pulpwood and firewood per year. Looked at in a standard measure, the total merchantable growth is 28.9 cords per year, or 0.72 cord per acre, per year. The value of this growth is approximately \$1,102.13. Which is \$7.55 per acre, per year. These numbers are low for forests in this area. Annual volume growth is low due to some area having low stocking. Volume growth will increase as these small stems grow into merchantable size classes. Value growth can be improved with the applications of good cultural practices. Harvesting lower quality trees will shift growth to higher value stems and increase the value of the wood growing on the parcel.

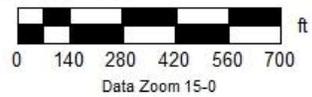
Management: This area receives a lot of recreational use. Traditionally recommendations for forest land in a heavy use area such as this would be to manage as forested park land using timber harvesting to maintain forest health, maintain or improve recreational opportunities and aesthetics. There is an opportunity here that I recommend the town consider, and that is to manage this area for New England Cottontail Habitat. There is a considerable area of early successional and edge habitat already here. Developing a plan to enhance this for cottontail habitat would provide needed habitat for this endangered animal and provide unique educational opportunities to people using the area.



Data use subject to license.

© DeLorme. XMap® 7.

www.delorme.com



Stand Descriptions

Falmouth Community Park Forest

Falmouth Community Park Forest, Stand 3								
Acres 16								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White pine	7,900	78	3%	\$220.00	\$10.00	\$1,738.00	\$780.00	
White pine pallet	6,200		3%	50.00		310.00	-	
Hemlock	63,400	84	2%	65.00	15.00	4,121.00	1,260.00	
Red oak	27,300	14	2%	275.00	25.00	7,507.50	350.00	
Hard maple		114	3%		25.00	-	2,850.00	
Beech		16	3%		25.00	-	400.00	
Popple		27	4%		30.00	-	810.00	
Hardwood		18	3%		25.00	-	450.00	
Totals	104,800	351				\$13,676.50	\$6,900.00	
per acre	6,550	22						
Total per acre		35.04						

Sawlog Size Hemlock, White pine and Hardwoods, Stand 3					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
16	140	6.9	428.5	139.8	0.85

Location: This stand makes up most of the northern third of the new acquisition (see map).

Terrain and Soils: Terrain is rolling, with some steep slopes down to intermittent streams. Soils are mostly of the Belgrade, Elmwood sandy loams and Buxton, Scantic and Suffield silt loams. These are productive timber-growing soils. All of these soils are moderately to poorly drained. When wet none of these soils bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: Walking trails pass through the stand. Access for removal of timber is not developed but will likely be out to field south of the stand.

Composition and Quality: This is mixedwood type. It is composed mostly of middle age classes of second growth timber along with some residual groups and individual stems of old field white pine. Stems appear to range between 50 and 100 years of age. Eastern hemlock, white pine and red oak are the most common species. Scattered stems of soft maple, white ash, white, and yellow birch are found. Quality is average. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration varies from none to sparse, suppressed seedlings and saplings of shade tolerant species to good stands of oak, white pine and hemlock. There has been some natural mortality and where light reaches the ground regeneration has become established.

Invasives: Honeysuckle and buckthorn are common, particularly along the flood plains of intermittent streams. If not controlled it can be expected that the population will increase following any natural or man caused disturbance.

Recommendations: The stand will benefit from an improvement cut to remove low quality, damaged, diseased and overstocked stems as well release established regeneration. While a little shallow in places due to high clay content, the soils here provide very good sites for tree growth. Almost any species will grow well here. White pine, red oak and hard maple are species that are present and desirable. Basal area should be reduced to about 100 square feet per acre. Following this recommendation will yield about 150 cords.

The selection system of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is heavily used by wildlife. It is close to field edges which provide plentiful browse for deer. Turkeys roost in some of the large softwoods. Young growth provides cover for snowshoe hare and other ground-dwelling wildlife. Much sign of many species of wildlife was seen during the field work. Snags and wildlife trees were left during the previous cut and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

Falmouth Community Forest Stand 4

Acres 24

Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s	
						Sawtimber	Cordwood
White pine	44,600.00	95	3%	220.00	10.00	9,812.00	950.00
White pine pallet	12,300.00		3%	50.00		615.00	-
Norway pine		30			10.00	-	300.00
Pitch pine		13	2%		10.00	-	130.00
Hemlock	5,200.00	104	2%	65.00	15.00	338.00	1,560.00
Red oak	7,100.00	20	2%	275.00	25.00	1,952.50	500.00
White ash		8	2%		25.00	-	200.00
White birch	2,900.00			80.00	25.00	232.00	-
Yellow birch		12	5%		25.00	-	300.00
Soft maple	5,800.00		2%	100.00	25.00	580.00	-
Popple		123	4%		30.00	-	3,690.00
Hardwood		23	3%		25.00	-	575.00
Totals	77,900	428				13,529.50	8,205.00
per acre	3,246	18					
Total per acre		24.33					

Sapling & Pole Hardwoods, Stand 4					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
24	161.7	6.9	565.5	86.2	0.64

Location: This stand makes up the southern two thirds of the new acquisition (see map).

Terrain and Soils: Terrain varies from flat to steep embankments down to intermittent streams. Soils are mostly Buxton and Suffield silt loams. These are productive timber-growing soils but somewhat heavy with clay, and only moderately drained. When wet it does not bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: Several walking trails pass through the stand. Access for logging is not developed but would likely be out to fields south or east of the stand.

Composition and Quality: This is mix of two types. The more gentle terrain is an old field stand of low quality white pine and popple. These areas are productive agricultural soils and were evidently farmed until the 1950's or 60's. There was a low initial stocking of pine seedlings on the abandoned field and the pine suffered a heavy attack by white pine weevil. This insect damage caused trees to develop crooked multiple stems. The steeper terrain was allowed to revert to forest earlier and supports a forest much like Stand 3.

Understory: This stand has little desirable regeneration to a heavy infestation of invasive species.

Invasives: This stand has been taken over by Honeysuckle and Buckthorn. In places it is so thick as to be impossible to walk through.

Recommendations: Timber and Wildlife: There is an excellent opportunity to create excellent habitat for the New England cotton tail. The pine stand is not particularly valuable nor does it have a lot of potential to become valuable. Clear cutting it would result in a dense early successional

stand within a few years. Located where it is adjacent to fields and other brushland, this would produce excellent habitat for the cottontail.

Blackstrap Hill Preserve

Between Hurricane Road, Old Gray Road and Route 95

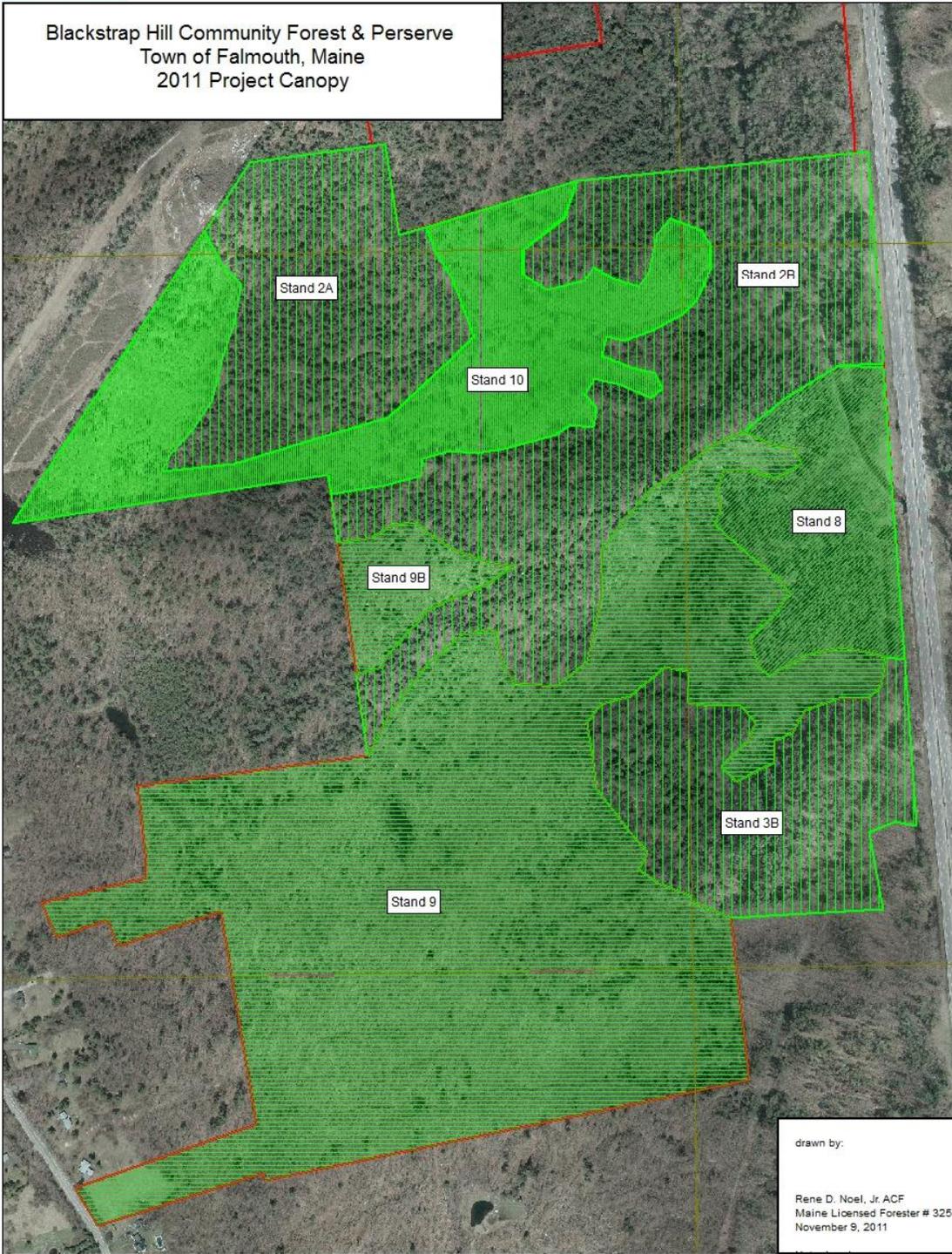
Stillings Lot across from Falmouth Road

Introduction: This addition adds almost 300 acres to what was already one of the larger parcels included in the inventory and plan. It is composed primarily of lots which were once owned by S.D. Warrren Paper Company. The forest shows variation consistent with the past history of land ownership and use. A right of way corridor for electric transmission and a gas pipeline pass along the west boundary and an interstate highway is the east boundary of the property. A number of trails cross the property. Snowmobile/ATV trails appear to get regular maintenance. Some walking trails are established and marked and get varying amounts of use.

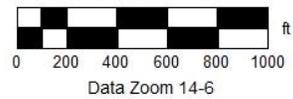
Growth: There is a total of 291 acres with commercial stocking on this lot. These acres grow 44272 board feet of sawtimber and 97.97 cords of pulpwood and firewood per year. Looked at in a standard measure, the total merchantable growth is 186.5 cords per year, or 0.64 cord per acre, per year. The value of this growth is approximately \$9,486.85, which is \$32.60 per acre, per year. These numbers are average for forests in this area. Annual volume growth is low due to large numbers of sub merchantable size stems which became established following heavy cutting done in the 1980's. Volume growth will increase as these small stems grow into merchantable size classes. Value growth can be improved with the applications of good cultural practices. Harvesting lower quality trees will shift growth to higher value stems and increase the value of the wood growing on the parcel.

Management: There is considerable variation over this area. There are riparian areas in the northeast corner, forest open edge along the powerline and interstate highway and forest stands that vary from young large sapling small pole size to intermediate age saw timber size stands. Numerous trails exist on the property some of which see regular use and others appear to be little traveled. The forest is well suited to a term which not often seen in this time but that is multiple use. Wildlife habitat for various forest and edge species is plentiful. Hiking, cross country skiing, hunting, snowmobiling and other recreation is practiced on the property. Timber has been harvested in the past and the forest is well recovered from a fairly heavy cut which occurred twenty to twenty-five years

ago. Wildlife, recreation and timber are all compatible with each other. Timber harvesting can be utilized to maintain or enhance wildlife habitat, remove hazard trees from recreation areas, maintain forest stands in vigorous growing condition and produce some income for the town.



Data use subject to license.
© DeLorme. XMap® 7.
www.delorme.com



Stand Descriptions

Blackstrap Hill Preserve Stand 2

Blackstrap Community Forest Stand 2								
Acres 99								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White Pine	204,200.00	111	3%	220.00	10.00	\$44,924.00	\$1,110.00	
Hemlock	114,700.00	1076	2%	65.00	15.00	7,455.50	16,140.00	
Red oak	185,900.00		2%	275.00	25.00	51,122.50	-	
White ash	16,100.00		2%		25.00	-	-	
White birch	5,200.00			80.00	25.00	416.00	-	
Soft maple	5,400.00		2%	100.00	25.00	540.00	-	
Popple		24	4%		30.00	-	720.00	
Hardwood	4,800.00	341	3%	50.00	25.00	240.00	8,525.00	
Totals	536,300.00	1,552				\$104,698.00	\$26,495.00	
per/acre	5,417.17	16						
cds/acre		26.51						

Pole to Small Sawlog Size White pine and Hardwoods, Stand 2					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
99	114.8	11.4	142.8	86.2	0.61

Location: Found in two stands along the northern boundary of this new planning area (see map).

Terrain and Soils: Terrain is rolling with some steep slopes. Soils are mostly of the Paxton, Hollis, Hinckley sandy loams and Suffield silt loam. These are productive timber growing soils and are moderately well to well drained. Suffield soils are only moderately drained. When wet none of these soils bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: Walking trails pass through the stand in several places. Old skid trails lead out west towards the power line right of way. At one time these may have connected to the old logging road access out Blackstrap Road. Because of terrain and soils long skids to extract wood from the north and eastern reaches of this area are unavoidable. Truck access to this area needs to be developed.

Composition and Quality: This is a softwood tending towards mixedwood type. It is composed mostly middle age classes of second growth timber with scattered older residuals. Most remaining stems appear to be between 60 and 100 years of age. Eastern white pine, hemlock and red oak are the most common species. Scattered stems of soft maple, white ash, white and yellow birch and beech are found. Stems range from large pole to medium sawlog size with most being in large pole to small sawlog size. Quality is average to good. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration is primarily of shade tolerant species hemlock and beech and mostly suppressed.

Invasive Species: Honeysuckle is pervasive along in the riparian area along the Piscataqua River and along the interstate highway. This area should be included in any plans to bring this population under control.

Recommendations: The stand will benefit from an improvement cut to remove low quality, damaged, diseased and overstocked stems as well as to create openings in which regeneration can become established. The stand is at a stocking where this treatment is possible. It is not a high priority and could be done soon to within five years. White pine and red oak will be the most productive timber species on most of the soils found in this stand and should be favored. Basal area should be reduced to about 80 to square feet per acre. .

Volume to be harvested at this time is estimated about 800 cords.

A combination of selection and shelter wood systems of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is lightly used by wildlife. There is little understory forage. Acorns are produce by the abundant oaks and heavily fed on when present. Mushrooms are also a food source for many species and utilized when present. The softwood likely provides some winter cover for deer, turkey and ruffed grouse. Red squirrels appear abundant and predators that feed on them are likely present. For most species this is an area they travel through to feed on what is available or use when winter cover is needed. Snags and wildlife trees should be preserved to the extent possible Oaks and some beech should be retained for the mast they produce.

Blackstrap Hill Preserve Stand 8

Blackstrap Community Forest Stand 8								
Acres 15								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White Pine	148,600.00	132	3%	\$220.00	\$10.00	\$32,692.00	\$1,320.00	
White pine pallet	53,900.00		3%	50.00		2,695.00	-	
White birch	7,400.00		2%	80.00	25.00	592.00	-	
Hardwood		16	3%	50.00	25.00	-	400.00	
Totals	209,900.00	148				\$35,979.00	\$1,720.00	
per acre	13,993.33	10						
Total per acre		37.85						

Sawlog Size White pine and Hardwoods, Stand 8					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
15	150.0	12.6	155.7	128.4	0.62

Location: This stand is found at about the middle of the eastern boundary (see map).

Terrain and Soils: Terrain is flat near the eastern boundary rising to rolling terrain with some steep slopes to the west. Soils are mostly Hinckley sandy loams. These are productive timber growing soils and are moderately well to well drained. When wet they do not bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: A walking trail passes through the western part of the stand and another less maintained trail parallels the river. Old skid trails were found that apparently lead out to the southwest. This is another area which would benefit from improved truck access.

Composition and Quality: This is a sawtimber size white pine stand. This stand may have seen some cutting twenty some years ago but not much because of its remoteness. Most remaining stems appear 70 to 80 years of age. Eastern white pine is the most common species. Scattered stems of white birch and soft maple are found. Stems range from large pole to large sawlog size with most being in 12 to 16 inch range. Quality is average. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration in most areas is limited to suppressed seedlings and saplings of shade tolerant species. Most is not desirable regeneration.

Invasive Species: Honeysuckle is pervasive along in the riparian area along the Piscataqua River and along the interstate highway. This area should be included in any plans to bring this population under control.

Recommendations: The stand will benefit from a thinning and improvement cut to remove low quality, damaged, diseased and overstocked stems as well as to create conditions favorable for the establishment of desirable regeneration. White pine dominates this stand and is a productive timber species on the soils found here. Basal area should be reduced to about 100 to square feet per acre. .

Volume to be harvested at this time it is estimated 150 to 200 cords would be cut.

White pine stands are a little unusual on this forest and managing to maintain the area in a pine type would increase the overall diversity of the forest. The shelter wood systems of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is lightly used by wildlife. There is evidence that wildlife traveling through the stand parallel to the interstate and river. Red squirrels very common as are various birds that live in softwood canopies. Evidence of feeding by various species of woodpeckers was also seen. For most species this is an area wildlife travel through to feed

on what is available. Snags and wildlife trees were left during previous cuts and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

Blackstrap Hill Preserve Stand 9

Blackstrap Community Forest Stand 9							
Acres 133							
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s	
						Sawtimber	Cordwood
White Pine	113,300	83	3%	220.00	10.00	\$24,926.00	\$830.00
White pine pallet	20,300		3%	50.00		1,015.00	-
Hemlock	4,900	158	2%	65.00	15.00	318.50	2,370.00
Red oak	334,300		2%	275.00	25.00	91,932.50	-
White ash	79,300		2%		25.00	-	-
White birch	15,400			80.00	25.00	1,232.00	-
Soft maple	25,800		2%	100.00	25.00	2,580.00	-
Hard maple	15,900		3%	150.00	25.00	2,385.00	-
Beech	4,900		3%	50.00	25.00	245.00	-
Hardwood	38,400	1121	3%	50.00	25.00	1,920.00	28,025.00
Totals	652,500	1362				\$126,554.00	\$31,225.00
per acre	4,906	10					
Total per acre		20.05					

Pole to Small Sawlog Size White pine and Hardwoods, Stand 9					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
133	103.0	10.3	156.8	173.5	0.64

Location: Makes up a good portion of the southern half of the property (see map).

Terrain and Soils: Terrain is rolling with some steep slopes. Soils are mostly of the Paxton, Hartland and Hinckley sandy loams. These are productive timber growing soils and are moderately well to well drained. When wet they do not bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: Walking trails pass through the stand in several places. Old skid trails lead out southwest to an old logging road that is accessed from Blackstrap Road. Because of terrain and soils, long skids to extract wood from the north and eastern reaches of this area are unavoidable.

Composition and Quality: This is a mix, age classes of second growth timber with scattered older residuals. This stand was cut about twenty years ago and larger sawlog quality stems harvested. Most remaining stems appear to be between 60 and 70 years of age. Eastern white pine, red oak and soft maple are the most common species. Scattered stems of hard maple, white ash, white and yellow birch and beech are found. Stems range from small pole to medium sawlog size with most being in large pole to small sawlog size. Quality is average for the larger diameter stems and good for the large sapling/pole size component. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration is heavy where cutting was done but has advanced to large sapling small pole size, 2"-5". It is composed of the same species that make up the overstory.

Recommendations: The stand will benefit from an improvement cut to remove low quality, damaged, diseased and overstocked stems as well as to release established

regeneration. The stand has just grown to a stocking where this treatment is possible. It is not a high priority and could be done soon to within ten years. White pine and red oak will be the most productive timber species on most of the soils found in this stand and should be favored. Basal area should be reduced to about 80 to square feet per acre. .

Volume to be harvested will depend on when treatment is applied. At this time it is estimated 500 to 800 cords would be cut. Each additional year's growth will increase that volume by about 50 cords.

A combination of selection and shelter wood systems of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is lightly used by wildlife. There is little understory forage. Acorns are produced by the abundant oaks and heavily fed on when present. Mushrooms are also a food source for many species and utilized when present. For most species this is an area they travel through to feed on what is available. Snags and wildlife trees were left during the previous cut and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

Blackstrap Hill Preserve Stand 10

Blackstrap Community Forest Stand 8								
Acres 44								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White pine pallet			3%	\$50.00	\$	\$		\$
Norway pine					10.00		-	-
Pitch pine			2%		10.00		-	-
Hemlock		15	2%	65.00	15.00		-	225.00
Red oak	52,500.00		2%	275.00	25.00		14,437.50	-
Yellow birch	24,300.00		5%	100.00	25.00		2,430.00	-
Popple		57	4%		30.00		-	1,710.00
Hardwood		521	3%	50.00	25.00		-	13,025.00
Totals	76,800.00	593					\$16,867.50	\$14,960.00
per/acre	1,745.45	13						
cds/acre		16.97						

Pole to Small Sawlog Size Hardwoods, Stand 10					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
44	88.9	9.0	177.6	51.5	0.61

Location: This stand is found in a convoluted band across the northern part of the property (see map).

Terrain and Soils: Terrain is rolling terrain and slopes gently down to the east. Soils are mostly Hinckley and Hollis sandy loams with some Suffield silt loams in the southeast portion of the stand. These are productive timber growing soils. Hollis and Hinckley are moderately well to well drained. Suffield is moderately wet. When wet they do not bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: A walking trail passes through the eastern and western part of the stand. Old skid trails were found that apparently lead out to the west. This area is not well accessed and would benefit from improved truck access to this part of the lot.

Composition and Quality: This is a pole to small sawtimber hardwood stand. Most remaining stems appear 70 to 80 years of age. Red oak, yellow and black birch are the most common species. Scattered stems of white birch, beech and soft maple are found. Stems range from pole to small sawlog size with most being under 14 inches. Quality of the potential crop trees is good to excellent. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration in most areas is limited to suppressed seedlings and saplings of shade tolerant species. Most is not desirable regeneration.

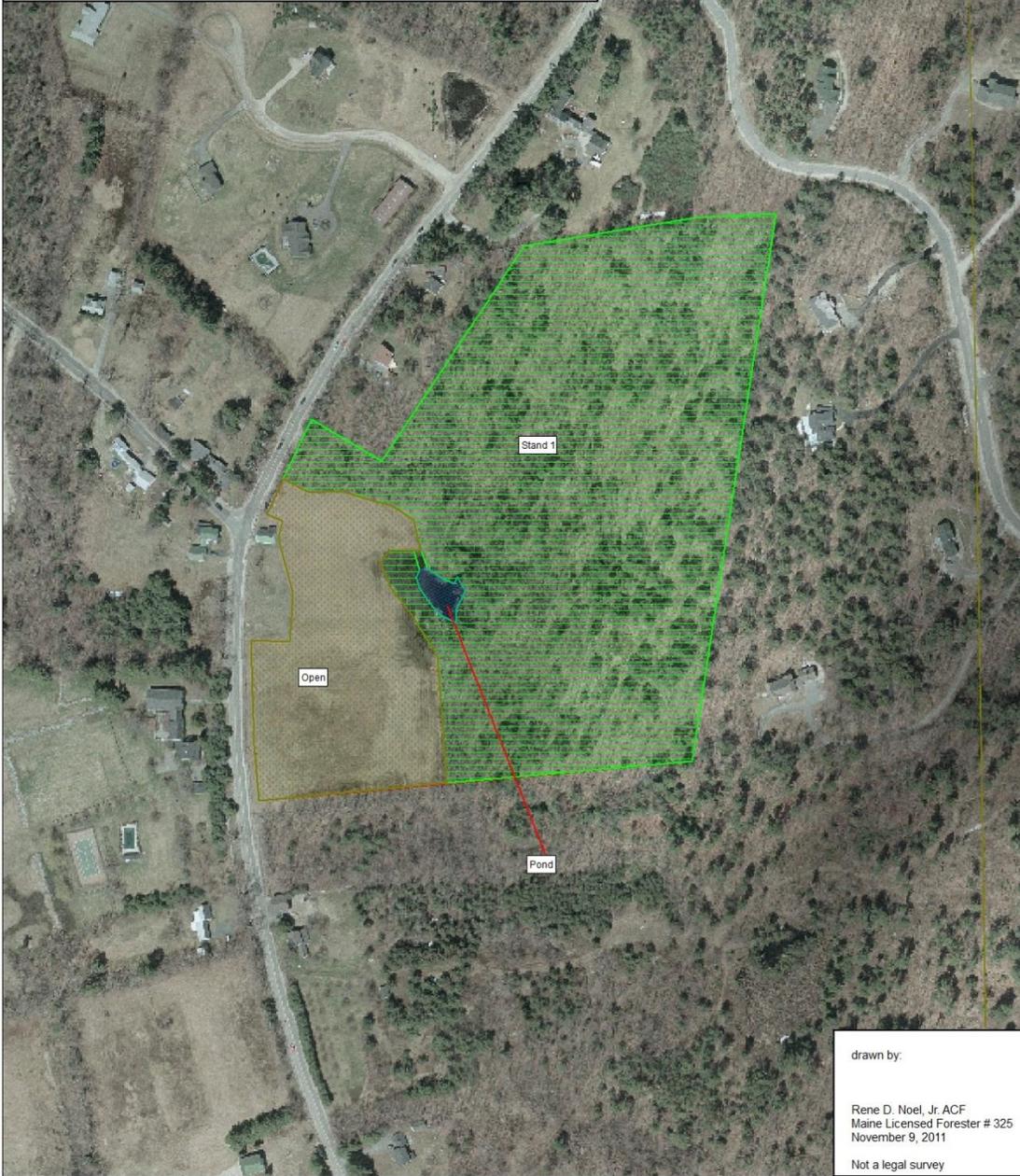
Recommendations: The stand will benefit from a thinning and improvement cut to remove low quality, damaged, diseased and overstocked stems. Red oak dominates this stand and is a productive timber species on the soils found here. It is also important to wildlife for the mast it produces. Basal area should be maintained in the range of 70 to 80 square feet per acre. This treatment should be implemented in about 10 years.

A combination of the selection and shelter wood systems of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is lightly used by wildlife. There is evidence of wildlife traveling through the stand. When acorns are present they are heavily utilized by many species. For most of the time animals use this area to travel through to feed on what is available. Snags and wildlife trees were left during previous cuts and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

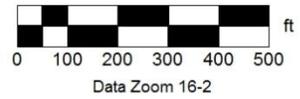
Blackstrap Hill Preserve Stillings Lot

Blackstrap Hill Community Forest & Preserve
Town of Falmouth, Maine
Stillings Lot
2011 Project Canopy



drawn by:
Rene D. Noel, Jr. ACF
Maine Licensed Forester # 325
November 9, 2011
Not a legal survey

Data use subject to license.
© DeLorme. XMap® 7.
www.delorme.com



Blackstrap Community Forest, Stillings Stand 1

Acres 17

Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s	
						Sawtimber	Cordwood
White Pine	41,700	24	3%	220.00	10.00	9,174.00	240.00
Hemlock	17,800	25	2%	65.00	15.00	-	375.00
Red oak	19,900	73	2%	275.00	25.00	2,985.00	1,825.00
White oak	13,200	7	3%	100.00	25.00	3,630.00	175.00
Yellow birch	2,100		5%		25.00	168.00	-
Soft maple	5,900	70	2%	100.00	25.00	-	1,750.00
Beech		36	3%		25.00	-	900.00
Popple			4%		30.00	-	-
Hardwood			3%		25.00	-	-

Sawlog Size White pine and Hardwoods, Stand 1

Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
17	110.0	5.9	423.1	174.2	0.88

Location: There is only one stand on this lot (see map).

Terrain and Soils: Terrain is flat gently sloping. Soils are mostly Hollis, Peru and Ridgebury sandy loams. These are productive timber growing soils. Hollis soils are well drained and the Peru and Ridgebury soils are moderately well drained. When wet they do not bear weight well and can be damaged by operating heavy equipment. The soils should be dry or frozen when heavy equipment is to be used.

Access: Several walking trails are maintained on this lot. Skid trails from a recent harvest (5 years) access most areas of the lot.

Composition and Quality: This is two age stand. An improvement cut marked and supervised by a forester was applied about 5 years ago. The older component of the stand is composed of sawlog size, white pine, hemlock red and white oak. The younger component is composed primarily of pole size stems of red oak, soft maple and hemlock. The older stems appear to be about 100 years old while the younger stems appear to be about 40 years old. Quality is good to excellent. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration in most areas is well established. Seedlings of white pine, red oak and soft maple are abundant and desirable. Also abundant and less desirable are beech sprouts. Most of the soils found here provide good sites for tree growth and it is unlikely beech will come to dominate the future forest. However, it is an aggressive species and will suppress less shade tolerant species such as white pine and the oaks should it overtop it.

Recommendations: The stand is in a growth period. It should be examined in about ten years at which time it will benefit it from a thinning and improvement cut to harvest mature and overstocked stems as well as to release established regeneration.

A combination of the selection and shelter wood systems of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: There is considerable evidence of use by wildlife. The combination of mature stems, seedlings and saplings and edge around the field and pond provide a range of habitats. Snags and wildlife trees were left during previous cuts and should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce. An obvious opportunity to enhance habitat is to cut a band around and field and pond to produce a broad ecotone. Early successional habitat is in decline as are many species which rely on it. Particularly rare are habitats provided by broad ecotones between forest and open habitat types. Clearcutting a 50 or 100 foot wide band would provide some of this habitat.

Longwoods Road Area Properties

Either side of Longwoods Road near Falmouth/Cumberland Town Line

Introduction: These three lots are back land with little frontage on public ways. The forests do not show evidence of any recent treatments or harvesting. The lot east of Longwoods road has second growth of about 70 years of age. The lots west of Longwoods have stands which appear to have become established following agricultural abandonment in the early 1900's. A number of trails cross the property. Snowmobile/ATV trails appear to get regular maintenance on the lot west of Longwood. Access for removal of timber is a challenge. The frontage on Longwoods for lot east of the road is apparently located in a wetland. West of Longwood the strip owned in fee is very narrow to the back land and it would be difficult to develop truck access by this route.

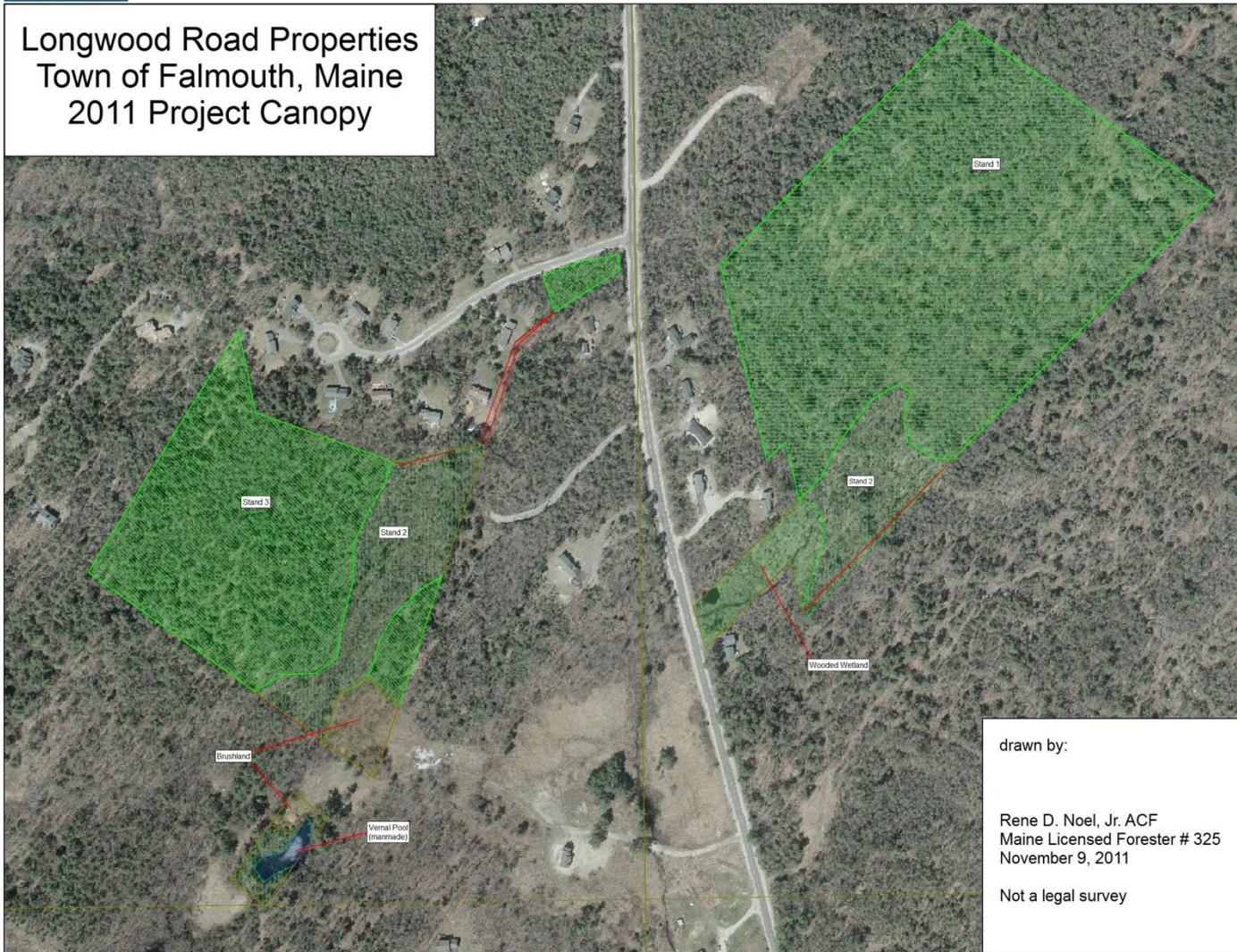
Growth: An inventory was calculated for the lots on each side of the road. The 2 acre lot was combined with the larger lot for the area west of the road. East of Longwood Road there is a total of 27 acres with commercial stocking on this lot. These acres grow 4,022 board feet of sawtimber, and 23.3 cords of pulpwood and firewood per year. Looked at in a standard measure, the total merchantable growth is 31.3 cords per year, or 1.25 cord per acre, per year. The value of this growth is approximately \$1,359.31, which is \$54.37 per acre, per year. West of Longwood there is a total of 20 acres of forest land and growth is 5,450 board feet of sawtimber, and 20.3 cords of pulpwood and firewood per year. Looked at in a standard measure, the total merchantable growth is 31.2 cords per year, or 1.56 cords per acre, per year. The value of this growth is approximately \$1,332.07, which is \$66.6 per acre, per year. These numbers are good for forests in this area. Value growth can be improved with the applications of good cultural practices. Harvesting lower quality trees will shift growth to higher value stems and increase the value of the wood growing on the parcel.

Management: There is some light recreational use of these two parcels, however, it is not of the level seen on other parcels. There is soft maple wetland on each of the larger parcels and about two acres of shrub/soft maple wetland east of Longwood Road. The small two acre lot has a borrow pit which likely functions as a vernal pool. These wetlands and the upland edges provide habitat for many species of wildlife. The upland forests themselves provide moderate value habitat due to lack of vertical diversity. There is a fairly light understory in these areas.

Both of these lots have difficult access for trucks used to remove forest products. This may limit opportunities for treatments that can be accomplished by harvesting timber. Timber harvesting can be utilized to maintain or enhance wildlife habitat, remove hazard trees

from recreation areas, maintain forest stands in vigorous growing condition and produce income for the town.

Longwood Road Properties Town of Falmouth, Maine 2011 Project Canopy



drawn by:

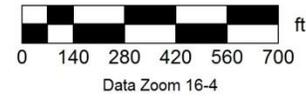
 Rene D. Noel, Jr. ACF
 Maine Licensed Forester # 325
 November 9, 2011

 Not a legal survey

Data use subject to license.

© DeLorme. XMap® 7.

www.delorme.com



Stand Descriptions

Longwoods Road East Stand 1

Longwoods Road East Stand 1								
Acres 18								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White pine	32,500	46	3%	220.00	10.00	7,150.00	460.00	
Hemlock	22,700	44	2%	65.00	15.00	1,475.50	660.00	
Spruce & Fir	4,800	40	2%	150.00	10.00	720.00	400.00	
Red oak	29,700	153	4%	275.00	25.00	8,167.50	3,825.00	
White ash		25	3%		25.00	-	625.00	
White birch	6,400		2%	80.00	25.00	512.00	-	
Yellow birch		25	3%	150.00	25.00	-	625.00	
Soft maple	4,100	140	5%	100.00	25.00	410.00	3,500.00	
Totals	100,200	473				18,435.00	10,095.00	
Total per acre	5,567	26						
		37.41						

Pole to Small Sawlog Size White pine Hemlock and Hardwoods, Stand 1					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
18	150.0	9.8	242.7	169.2	1.32

Location: It is the western three fourths of the lot (see map).

Terrain and Soils: Terrain is fairly flat to gently rolling. Soils are mostly of the Hollis sandy loam and Scantic silt loam. These are productive timber growing soils. Hollis soils are well drained and Scantic soils poorly drained. Heavy equipment can be operated on Hollis soils except for the wettest times of year. When wet Scantic soils do not bear weight well and can be damaged by operating heavy equipment. This soil should be dry or frozen when heavy equipment is to be used.

Access: Walking trails pass through the stand in several places. As mentioned in the introduction there is no developed access for the removal of forest products. Truck access to this area needs to be developed.

Composition and Quality: This is a mixedwood type. It is composed mostly of middle age second growth timber with scattered older residuals. Most remaining stems appear to be about 70 years of age. Eastern white pine, hemlock, soft maple and red oak are the most common species. Scattered stems of white ash, white and yellow birch and beech are found. Stems range from large pole to medium sawlog size. Quality is average to good. In most places there are more than adequate numbers of good quality stems to occupy the site.

Understory: Regeneration is primarily of shade tolerant species hemlock and beech and mostly suppressed.

Recommendations: The stand will benefit from an improvement cut to remove low quality, damaged, diseased and overstocked stems as well as to create openings in which regeneration can become established. White pine and red oak will be the most productive timber species on most of the soils found in this stand and should be favored. Basal area should be reduced to about 100 to square feet per acre.

Volume to be harvested at this time is estimated about 200 cords.

Selection and shelter wood systems of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: This stand is lightly used by wildlife. There is little understory forage. Acorns are produce by the abundant oaks and heavily fed on when present. Mushrooms are also a food source for many species and utilized when present. The softwood likely provides some winter cover for deer, turkey and ruffed grouse. For most species this is an area they travel through to feed on what is available or use the habitat along the wetland to the east. Snags and wildlife trees should be preserved to the extent possible. Oaks and some beech should be retained for the mast they produce.

Longwoods Road East Stand 2

Longwoods Road East Stand 2								
Acres 7								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White pine	8,400	4	3%	\$220.00	\$10.00	\$1,848.00	\$40.00	
Red oak	5,600	9	4%	275.00	25.00	1,540.00	225.00	
White oak			2%	100.00	25.00	-	-	
White birch	-	5	2%	80.00	25.00	-	125.00	
Soft maple	10,000	101	5%	100.00	25.00	1,000.00	2,525.00	
Totals	24,000	119				\$4,388.00	\$2,915.00	
per acre	2,667	13						
Total per acre		18.56						

Pole to Small Sawlog Size White pine Hemlock and Hardwoods, Stand 2					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
7	154.3	4.0	764.8	108.4	0.85

Location: This stand makes up most of the lot (see map).

Terrain and Soils: Terrain is fairly flat. Soils are Scantic silt loam. These are productive timber growing soils. Scantic soils are poorly drained. When wet Scantic soils do not bear weight well and can be damaged by operating heavy equipment. This soil should be dry or frozen when heavy equipment is to be used.

Access: As mentioned in the introduction there is no developed access for the removal of forest products. Truck access to this area needs to be developed. In addition this is a wetland and care should be taken not to damage soils.

Composition and Quality: This is a soft maple wetland type with scattered stems of white pine growing on hummocks and high spots. It is composed second growth timber. Most remaining stems appear to be about 100 years of age. Soft maple and eastern white pine are the most common species. Stems range from large pole to large sawlog size. Quality of the maple is average for this type of stand and good to excellent for the white pine.

Understory: There is little regeneration of tree species. The understory is composed of winterberry, alder and other shrub species typical of wetland forest.

Recommendations: This is a fairly old stand of soft maple wetland type. Typical management for wood would be to patch cut and regenerate. However there is the option of leaving this stand undisturbed. Soils are wet and it is not easily accessed for recreation. It is well on its way to developing old growth characteristics. Add that there is no good access and it makes sense to consider it for preserve as a stand of old growth.

Wildlife: The stand is used heavily by many species that require wetland such as amphibians. It is drained by a small stream so there were no apparent vernal pools but I suspect it is still utilized to some extent for breeding. Upland species will browse on the lush wetland vegetation and use the dense understory as escape cover.

Longwoods Road West Stand 2

Longwoods Road West Stand 2								
Acres 7								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White pine	15400	65	3%	\$ 220.00	10.00	3,388.00	650.00	
White pine pallet	1200		3%	\$ 50.00		60.00	-	
Hemlock	1100	15	2%	\$ 65.00	15.00	71.50	225.00	
Spruce & Fir	3300	9	4%	\$ 150.00	10.00	495.00	90.00	
Red oak		3	2%	\$ 275.00	25.00	-	75.00	
White birch		8		\$ 80.00	25.00	-	200.00	
Soft maple	3,400	189	2%	\$ 100.00	25.00	340.00	4,725.00	
Popple		10			30.00	-	300.00	
Totals	24,400	299				4,354.50	6,265.00	
per acre	3,486	43						
Total per acre		49.69						

Pole to Small Sawlog Size White pine Hemlock and Hardwoods, Stand 2					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
7	188.9	5.8	825	102.9	1.18

Location: This stand is located along the western border of the lot (see map).

Terrain and Soils: Terrain is fairly flat. Soils are Scantic silt loam. These are productive timber growing soils. Scantic soils are poorly drained. When wet Scantic soils do not bear weight well and can be damaged by operating heavy equipment. This soil should be dry or frozen when heavy equipment is to be used.

Access: As mentioned in the introduction there is no developed access for the removal of forest products. Truck access to this area needs to be developed. In addition this is a wetland and care should be taken not to damage soils.

Composition and Quality: This is a soft maple wetland type with scattered stems of white pine and spruce growing on hummocks and high spots. It is similar to the soft maple stand across Longwoods Road but it is not quite as wet. It is composed second growth timber. Most remaining stems appear to be about 100 years of age. Soft maple, red spruce and eastern white pine are the most common species. Stems range from large pole to large sawlog size. Quality of the maple is average for this type of stand and good to excellent for the white pine and spruce.

Understory: There is little regeneration of tree species. The understory is composed of winterberry, alder and other shrub species typical of wetland forest.

Recommendations: This is also a fairly old stand of soft maple wetland type. Typical management for wood would be to patch cut and regenerate. However there is the option of leaving this stand undisturbed. Soils are wet and it is not easily accessed for recreation. It is well on its way to developing old growth characteristics. Add that there is no good access and it makes sense to consider it for preserve as a stand of old growth.

Wildlife: The stand is used heavily by many species that require wetland such as amphibians. There is less standing water and is likely not utilized a lot for breeding.

Upland species will browse on the lush wetland vegetation and use the dense understory as escape cover.

Longwoods Road West Stand 3

Longwoods Road West Stand 3								
Acres 13								
Species	Board Feet	Cords	Growth Rate	Stumpage per MBF	per Cord	\$'s		
						Sawtimber	Cordwood	
White pine	112400	57	3%	\$220.00	\$10.00	\$24,728.00	\$570.00	
Spruce & Fir	12700	14	4%	150.00	10.00	4,005.00	140.00	
White birch	9300	4		80.00	25.00	744.00	100.00	
Soft maple	22800	200	4%	100.00	25.00	2,280.00	5,000.00	
Totals	171,200	275				\$31,757.00	\$5,810.00	
per acre	13,169	21						
Total per acre		47.49						

Sawlog Size Old Field White, Stand 3					
Acres	Basal Area	Avg. DBH	Avg. Number Trees/ac	Growth Per acre	
				Board feet	Cords
13	150	9.8	242.7	411.7	1.61

Location: This stand is the western three quarters of the lot (see map).

Terrain and Soils: Terrain is fairly flat. Soils are Hollis sandy loam. These are productive timber growing soils. Hollis soils are well drained. Heavy equipment can be operated on these soils on all but the wet times of year.

Access: There are walking trails that pass through this stand. As mentioned in the introduction there is no developed access for the removal of forest products. Truck access to this area needs to be developed.

Composition and Quality: This is an old field white pine stand of sawlog size. Most stems appear to be about 80 years of age. Eastern white pine is the most common species. Also found are scattered stems of soft maple, white birch and red spruce. Stems range from large pole to large sawlog size. Quality is fair to good.

Understory: There is little desirable regeneration. Suppressed balsam fir, hemlock and beech are most common.

Recommendations: The stand will benefit from an improvement cut to remove low quality, damaged, diseased and overstocked stems as well as to create openings in which regeneration can become established. White pine and red oak will be the most productive timber species on most of the soils found in this stand and should be favored. Basal area should be reduced to about 100 to square feet per acre.

Volume to be harvested at this time is estimated about 200 cords.

Shelter wood systems of silviculture should be used for the long term management of this stand. The goal should be a cutting cycle of about ten years.

Wildlife: The stand is used heavily by many species that require wetland such as amphibians. There is less standing water and is likely not utilized a lot for breeding. Upland species will browse on the lush wetland vegetation and use the dense understory as escape cover.